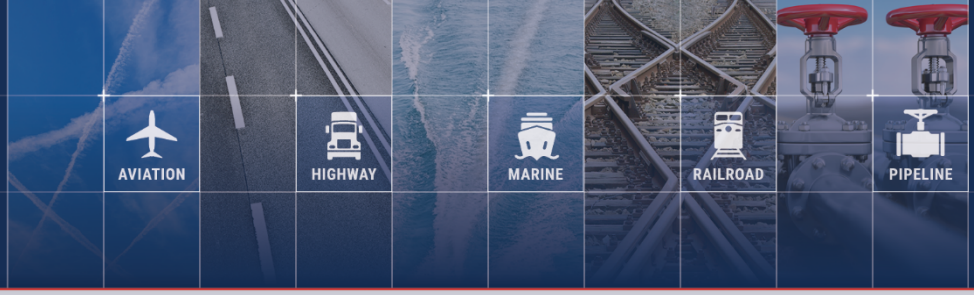

Aviation Investigation Final Report

Location:	Willow, Alaska	**Accident Number:**	ANC22LA004
Date & Time:	October 23, 2021, 18:25 Local	**Registration:**	N368G
Aircraft:	GREGG ORIGER PA-18 REPLICA	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal, 1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was landing his experimental, amateur-built airplane at a private airport when the airplane impacted terrain in a nose-down, near-vertical attitude short of the runway.

A postaccident examination of the airframe and engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation. No significant tree impacts were observed on the airframe. Based on the available information, it is likely that the pilot exceeded the airplane's critical angle of attack while maneuvering for landing, which resulted in an aerodynamic stall and loss of control.

At the pilot's request, numerous design changes were incorporated into the wings, ailerons, and flaps of the accident airplane. The manufacturer of the kit and the designer of the flaps stated that they told the pilot and builder that the design changes were not recommended; however, the kit was built to the pilot's specifications. It is likely that the design changes affected the stall characteristic of the airplane; however, the role those changes played in the accident sequence could not be determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's exceedance of the airplane’s critical angle of attack while maneuvering for landing, which resulted in an aerodynamic stall and loss of control.

Findings

Personnel issues	Aircraft control - Pilot
Aircraft	Airspeed - Not attained/maintained
Aircraft	Angle of attack - Not attained/maintained

Factual Information

History of Flight

Approach	Loss of control in flight (Defining event)

On October 23, 2021, about 1825 Alaska daylight time, an experimental, amateur-built PA-18 Replica airplane, N368G, sustained substantial damage when it was involved in an accident near Willow, Alaska. The commercial pilot was fatally injured, and the passenger sustained serious injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot departed from Anderson Lake Airport, Wasilla, Alaska, and was returning to Minuteman Strip Airport (AK68), Willow, when the accident occurred.

According to the passenger, while on final approach to the runway, the airplane impacted something, which she presumed was a tree, at the same time the tail became “squirrely.” She could not remember the exact order of the events. The next thing she remembered was being slumped over after the airplane had come to rest.

A witness located about .3 nautical miles to the southeast of AK68 observed the airplane fly over his location and reported that the engine appeared to be at a low power setting, as it was fairly quiet, which he thought was unusual. The airplane subsequently made a turn and disappeared from view. He then heard an increase in engine power followed by the sound of an impact. He stated that he did not hear any unusual sounds from the airplane and that the engine appeared to be operating normally.

The airplane impacted in a near-vertical attitude at an elevation of about 274 ft, resulting in substantial damage to the fuselage and wings. All major components of the airplane were located at the main accident site. No significant tree impacts were observed on the airframe. The flaps were found in the fully extended position.

A postaccident examination of the airframe and engine revealed no pre-accident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

According to the owner of the company that manufactured the kit from which the accident airplane was built, the accident pilot requested numerous design changes into the wings, ailerons, and flaps. The owner of the company stated that he was not comfortable with and recommended against some of these changes; however, the kit was manufactured to the pilot’s specifications.

The designer of the wing flaps installed on the airplane stated that he remembered working with the pilot on his build request and saw several “red flags.” He stated that too many changes were being made to the design without the knowledge of how these changes would affect each other. He strongly recommended against the requested changes.

A note found in the airplane’s maintenance records described the stall characteristics of the airplane and stated in part: “Stalls - The nose drops like a rock.” The note went on to say: “Another anomaly I have seen is the big flaps kind of shadow the rudder when at slow speeds. So I suggest retract flaps on stall recoveries. Obviously this will be at altitude for stall/slow flight maneuvers.”

Pilot Information

Certificate:	Airline transport; Commercial; Flight engineer; Flight instructor	**Age:**	53,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	August 11, 2021
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 5500 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	GREGG ORIGER	**Registration:**	N368G
Model/Series:	PA-18 REPLICA	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	1801
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Superior Lycoming
ELT:		**Engine Model/Series:**	O-360
Registered Owner:	On file	**Rated Power:**	
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PAWS,354 ft msl	**Distance from Accident Site:**	17 Nautical Miles
Observation Time:	18:56 Local	**Direction from Accident Site:**	119°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	50°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.12 inches Hg	**Temperature/Dew Point:**	7°C / -2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Wasilla , AK	**Type of Flight Plan Filed:**	None
Destination:	Willow, AK	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class G

Airport Information

Airport:	MINUTEMAN STRIP AK68	**Runway Surface Type:**	Dirt
Airport Elevation:	290 ft msl	**Runway Surface Condition:**	
Runway Used:	05	**IFR Approach:**	None
Runway Length/Width:	1200 ft / 40 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 1 Serious	**Latitude, Longitude:**	61.718812,-150.05409

Administrative Information

Investigator In Charge (IIC):	Banning, David
Additional Participating Persons:	Thomas Palmer ; FAA; Anchorage , AK Mark Platt; Lycoming; PA
Original Publish Date:	May 3, 2023
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=104158

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, "accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties … and are not conducted for the purpose of determining the rights or liabilities of any person" (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB's statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available here.